

**Animal Science Research Centre - Beef Unit Trial Results – 2008 (d)**

**Effect of weaning dairy-bred calves either gradually or abruptly**

**Stock:**

36 Feb-Mar 2008 born Holstein and Continental x Holstein bull calves.

**Treatments:**

The calves were fed colostrum within 6 hours of birth and for a further 4 days and were placed on to the following treatments in individual pens:

**Abrupt** Bucket fed warm Wynngold Bloom Milk Replacer (23% crude protein, 20% oil) mixed at 125g per litre of water twice per day at 4 litres per day. At 7 days of age the milk was increased to 5 litres per day and 18% CP pelleted early weaning concentrates (Wynnstay Start 'n' Wean) were offered *ad libitum*. The calves were abruptly weaned at 6 weeks of age.

**Gradual** Calves fed an identical quantity of Milk Replacer to the above but from 5 days prior to weaning the milk was gradually reduced from 5 to 1 litre per day by weaning at 6 weeks old. Early weaning concentrates were offered *ad libitum* from day 7.

Fresh water and straw were offered *ad lib* from 4 days old to both treatment groups. The calves were moved into group pens at weaning.

**Results:**

Livewt (kg)	Abrupt	Gradual	s.e.d	Sig
Start	47.2	47.2	3.04	NS
Weaning	62.0	62.7	3.53	NS
11 weeks	96.8	105.4	7.40	NS

DLWG (kg)	Abrupt	Gradual	s.e.d	Sig
Start - Weaning	0.353	0.369	0.079	NS
Weaning - 11 weeks	0.993	1.220	0.096	*
Start - 11 weeks	0.644	0.755	0.081	NS

NS = not significant, \* =  $p < 0.05$ .

There were no significant differences in wither height or girth measurements between the treatments.

Bloom score was measured on the following scale: 1=dull, 3 = normal, 5 = shiny

Coat Bloom Score	Abrupt	Gradual	s.e.d	Sig
Start	2.50	2.44	0.1360	NS
Weaning	3.38	3.25	0.125	NS
11 weeks	3.31	3.59	0.103	**

NS = not significant, \*\* =  $p < 0.01$

Feed Intakes (kg) & FCR	Abrupt	Gradual	s.e.d	Sig
Milk Replacer	23.5	21.0		
Concs Start - Wean	12.7	16.7	3.12	NS
Concs Wean - 11 weeks	80.6	90.6		
Concs Start - 11 weeks	93.3	107.3		
Total Feed Intake	116.8	128.3		
FCR (kg feed: kg gain)	2.35	2.20		

Feed Costs (£ – Jan 2008)	Abrupt	Gradual
CMR @ £1300/t	30.55	27.30
Concs @ £261/t	24.35	28.05
Total Feed Costs/Calf	54.90	55.35
Feed Cost/kg livewt gain	1.11	0.95

It was noted that abruptly weaned calves (mainly those that were eating less than 1kg of concentrates prior to weaning) were more vocal than gradually weaned calves, spent more time standing at the front of the pen and taking interest in humans for several days and up to a week after weaning. There were however no differences in the health or number of medication treatments between the groups.

#### Results & Conclusions:

- The gradually weaned calves were on target to achieve the MLC (1999) growth target for rearing bull calves to 12 weeks old of 115kg. The abruptly weaned calves would not achieve this target.
- The gradually weaned calves recorded significantly higher ( $p < 0.05$ ) DLWG's from weaning to 11 weeks old, gained an extra 8.6kg live weight and had an improved coat bloom score ( $p < 0.01$ ).
- Gradually weaned calves consumed 11.5kg more feed and recorded an improved FCR.
- Total feed costs were similar however due to the improved performance of the gradually weaned calves they recorded reduced feed costs per kg gain of 16p. If the additional 8.6kg of live weight gain is valued at £1.40/kg this is worth £12.04 per calf.
- It is concluded from the study that artificially reared calves should be gradually weaned. This will demand more labour. If an abrupt weaning strategy is preferred, calves must be eating at least 1kg of concentrates per day at weaning.

#### Acknowledgement:

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#### Reference:

Marsh, S.P. and Greenow, R. 2009 Effect of weaning dairy-bred bull calves either gradually or abruptly. *Proceedings of the British Society of Animal Science*. Paper 149.